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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,007	10/05/2000	Phillip M. Braun	00216/447001	8518
26161	7590	02/12/2004	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			BALSIS, SHAY L	
			ART UNIT	PAPER NUMBER
			1744	
DATE MAILED: 02/12/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/680,007	Applicant(s) BRAUN ET AL.	
	Examiner Shay L Balsis	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-35,38-44,49 and 51-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-35,38-44,49 and 51-65 is/are rejected.
- 7) ☒ Claim(s) 63 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the supporting structure comprising a sleeve must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 5-9, 11-13, 16, 18, 20-22, 29, 35, 39-43, 49 and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by Haeusser et al. (USPN 4757570).

Haeusser teaches an oral device comprising an elongate handle (1), a head, extending from the handle, having a pair of elongate arms (3,4) that include opposed surfaces with a predetermined depth. Plurality of pairs of opposed brush head cleaning elements (6) are located on the opposed surfaces at predetermined intervals, and are positioned to clean interproximal surfaces of a user's teeth. Each cleaning element is positioned at an acute angle which is greater than 15 degrees with respect to an interproximal line (see figure 1). The cleaning elements are positioned so that they flex towards the opposed arms during movement out of the users mouth and they are substantially perpendicular to the opposed surfaces when the oral device is moved into the mouth. The opposed

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cleaning elements of each pair of cleaning elements define a v-shape (figures 1 and 2). The head of the toothbrush includes a web (2) extending from the handle and the opposed arms extend outwardly from opposite side of the web, forming a u-shaped opening. There are centering elements (6'), which allow the brush to be positioned correctly around the teeth, while also obviate injury to the gums. The handle includes a gripping portion (1) that is to be grasped by the users thumb and fingers. In use, the user holds the handle in their hand and inserting the head portion into their mouth. The head portion comprises the elongate arms and cleaning elements. The cleaning elements are positioned so that they straddle a row of teeth. The user then moves the head of the oral device towards the back of the mouth and then pulls the device to the front of the mouth, repetitively.

4. Claims 1-2, 4-9, 11-13, 16, 18, 20-22, 29, 33, 35, 39-43, 49 and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis (USPN 1908509).

Davis teaches an oral device comprising an elongate handle (10), a head, extending from the handle, having a pair of elongate arms (12, 13) that include opposed surfaces with a predetermined depth. Plurality of pairs of opposed brush head cleaning elements (15, 16) are located on the opposed surfaces at predetermined intervals, and are positioned to clean interproximal surfaces of a user's teeth. Each cleaning element is positioned at an acute angle which is greater than 15 degrees with respect to an interproximal line (see figure 2). The cleaning elements extend from a surface at substantially the same angle as the other cleaning elements (figure 2). The cleaning elements are positioned so that they flex towards the opposed arms during movement out of the users mouth and they are substantially perpendicular to the opposed surfaces when the oral device is moved into the mouth. The opposed cleaning elements of each pair of cleaning elements define a v-shape (figure 2). The head of the toothbrush includes a web extending from the handle and the opposed arms extend outwardly from opposite side of the web, forming a u-shaped opening. The cleaning elements angle

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away from the web. There are centering elements (14a), which allow the brush to be positioned correctly around the teeth, while also obviate injury to the gums. The handle includes a gripping portion that is to be grasped by the user's thumb and fingers. In use, the user holds the handle in their hand and inserts the head portion into their mouth. The head portion comprises the elongate arms and cleaning elements. The cleaning elements are positioned so that they straddle a row of teeth. The user then moves the head of the oral device towards the back of the mouth and then pulls the device to the front of the mouth, repetitively.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 10, 34 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. and unpatentable over Davis.

Haeusser and Davis discloses all the essential elements of the claimed invention however, the reference fails to teach that the bristle angle with respect to the interproximal line is from 15-25

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degrees or that the bristle angle with respect to the web is 10-20 degrees. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to angle the bristles in that exact angle orientation because Applicant has not disclosed that angle orientation provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with an angle of 75 degrees as taught by Haeusser et al. because both angles perform the same function of effective removal of plaque. Therefore, it would have been obvious to one of ordinary skill in the art to modify Haeusser or Davis to obtain the invention as specified in claims 10, 34 and 38.

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. in view of Okin (USPN 4679273) and Davis in view of Okin (USPN 4679273).

Haeusser and Davis teach all the essential elements of the claimed invention however, the reference fails to teach a brush head wherein the cleaning elements are 2-20% shorter than the cleaning elements of an adjacent pair as the pairs are spaced further from the handle. Okin teaches a toothbrush with a handle comprising a handle and a brush head. The brush head comprising bristles angled away from the handle portion. Okin also teaches that the bristles closest to the handle have a maximum height of 12 mm while the bristles farthest from the handle have a maximum height of 9 mm (col. 6, lines 44-47). Overall that is about a 20% decrease in height, which means that the adjacent pairs would most definitely fall within the range of 2-20% difference. Haeusser, Davis and Okin are analogous art because they are from the same field of endeavor of toothbrushes. At the time of the invention, it would have been obvious to one skilled in the art to modify the cleaning elements of Haeusser and Davis' invention with Okin's tapering cleaning elements. The motivation for doing so would have been to further aid in reaching into the vestibular regions toward the back of the oral cavity with the attendant space limitations (col. 6, lines 36-44). Therefore it would have been

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obvious to combine Haeusser and Davis with Okin to obtain the invention as specified in claims 14 and 15.

8. Claims 17 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. in view of Watanabe et al. (USPN 6065176) and Davis in view of Watanabe et al. (USPN 6065176).

Haeusser and Davis teach the essential elements of the claimed invention however the reference is silent about the depth (width) of the elongate arms. Watanabe et al. discloses a toothbrush with a head having width of 11.3 mm (col. 5, line 21, figure 6b). Haeusser, Davis and Watanabe et al. are analogous art because they are from the same field of endeavor of toothbrushes. Though it is not stated in Haeusser and Davis what the depth (width) is of the elongate arms, it is obvious that it needs to be within the range of 5-15 mm. If it is smaller than 5 mm it will not provide sufficient cleaning in an adult mouth. If it is larger than 15 mm it would be difficult clean all the back teeth since it is such a small cavity. At the time of the invention, it would have been obvious to one skilled in the art to modify the depth of the elongate arms on Haeusser and Davis' invention with Watanabe's depth since his depth falls within the 5-15 mm range, which is an appropriate size for an adult mouth. Therefore it would have been obvious to combine Watanabe with Haeusser and Davis to obtain the invention as specified in claims 17 and 44.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. in view of O'Halloran (USPN 4454623) and Davis in view of O'Halloran (USPN 4454623).

Haeusser and Davis teach the essential elements of the claimed invention however, the reference fails teach a handle with a disc-shaped gripping portion. O'Halloran teaches a toothbrush with a handle comprising an elongated shaft (24) and a disc-shaped gripping portion (12, 14). The head of the toothbrush is attached to one end of the shaft and the gripping portion is attached at the

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other end of the shaft. Haeusser, Davis and O'Halloran are analogous art because they are from the same field of endeavor of toothbrushes. At the time of the invention, it would have been obvious to one skilled in the art to replace the handle portion of Haeusser and Davis' invention with O'Halloran handle portion. The motivation for doing so would have been to create an inherently stable brush that would enable the user to resist unwanted rotation and to delicately control the brush while gripping it only lightly. The delicate light touch with which the brush can be effectively manipulated and the large palm, finger and thumb rest surfaces contribute to the pleasure and comfort of the user and tend to promote a more positive attitude toward brushing (col. 4, lines 42-52).

10. Claims 28 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. in view of Kramer (USPN 6185779) and Davis in view of Kramer (USPN 6185779).

Haeusser and Davis teach the essential elements of the claimed invention however the reference is silent about the distance between adjacent pairs of cleaning elements. Kramer discloses a toothbrush with a head comprising bristles spaced more than .55 mm apart (col. 7, lines 49-51). Haeusser, Davis and Kramer are analogous art because they are from the same field of endeavor of toothbrushes. At the time of the invention, it would have been obvious to one skilled in the art to space the bristles 0.5-6.0 mm apart because Applicant has not disclosed that spacing the bristles 0.5-6.0 mm apart provides an advantage, is used for a particular purpose, or solves a stated problem. Therefore, it would have been obvious to one of ordinary skill in the art to combine Haeusser and Davis' invention with Kramer's spacing to obtain the invention as specified in claims 28 and 56.

11. Claims 30 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. in view of Kweon (USPN 6067684) and Davis in view of Kweon (USPN 6067684).

Haeusser and Davis teach the essential elements of the claimed invention however the reference is silent about using elastomeric fins as cleaning elements. Kweon discloses a toothbrush

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with a head comprising silicon rubber bristles (abstract). Haeusser, Davis and Kweon are analogous art because they are from the same field of endeavor of toothbrushes. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use Kweon's rubber bristles in place of Haeusser and Davis' bristles. The motivation for doing so would have been that the rubber bristles are soft and have both a high polishing power and a high water repellency, thus effectively cleaning teeth without injuring one's teeth or gums (abstract). Therefore, it would have been obvious to one of ordinary skill in the art to combine Haeusser and Davis' invention with Kweon's bristles to obtain the invention as specified in claims 30 and 58.

12. Claims 31, 59 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. in view of Volpenhein (USPN 6178583) and Davis in view of Volpenhein (USPN 6178583).

Haeusser and Davis teach the essential elements of the claimed invention however the reference fails to teach longer thinner bristles on the inside of the cleaning elements and shorter thicker bristles on the outside. Volpenhein discloses a toothbrush with bristles for interproximal cleaning. There are a few longer bristles for interproximal cleaning (132) surrounded by many shorter bristles (120) for surface cleaning. Haeusser, Davis and Volpenhein are analogous art because they are from the same field of endeavor of toothbrushes. At the time of the invention, it would have been obvious to one skilled in the art to modify the cleaning elements of Haeusser and Davis' invention with Volpenhein's interproximal cleaning bristles. The motivation for doing so would have been to provide superior cleaning as well as gum and inter dental stimulation (abstract). Therefore it would have been obvious to combine Haeusser and Davis with Volpenhein to obtain the invention as specified in claims 31, 59 and 61-63.

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13. Claims 32 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. in view of Shipp (USPN 5930860) and Davis in view of Shipp (USPN 5930860).

Haeusser and Davis teach all the essential elements of the claimed invention however the reference is silent about the bristle diameter. Shipp discloses a toothbrush with a head comprising bristles with a diameter of 0.005-0.006 inches (col. 4, lines 4-9) that taper 5-8 degrees when moving away from the handle. The references are all analogous art because they are from the same field of endeavor of toothbrushes. At the time of the invention, it would have been obvious to use Shipp's bristles in place of Haeusser and Davis' bristles. The motivation for doing so would have been to allow the bristle to bend easily and cause the bristles to be gentle on the gums (col. 4, lines 4-9). Therefore, it would have been obvious to one of ordinary skill in the art to combine Haeusser and Davis' invention with Shipp's bristle diameter to obtain the invention as specified in claims 32 and 60.

14. Claims 23-27 and 51-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. in view of Trattner et al. (USPN 2066241) and Davis in view of Trattner et al. (USPN 2066241)

Haeusser and Davis teach all the essential elements of the claimed invention however, the reference fails to teach centering elements mounted on the opposed surfaces. Trattner et al. teaches centering elements (12), which allow the brush to be positioned correctly around the teeth. The centering elements are formed from a resilient material such as rubber and are mounted perpendicular to front and back surfaces of the user's teeth. It would have been obvious to one of ordinary skill in the art at the time of the invention to use centering means to obviate injury to the gums (page 2, col. 1, lines 11-25).

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15. Claims 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haeusser et al. in view of Volpenhein (USPN 6178583), further in view of Shipp (USPN 5930860) and Davis in view of Volpenhein (USPN 6178583), further in view of Shipp (USPN 5930860).

Haeusser and Davis both in view of Volpenhein teach the essential elements of the claimed invention however the references are silent about the bristle diameter. Shipp discloses a toothbrush with a head comprising bristles with a diameter of 0.005-0.006 inches (col. 4, lines 4-9) that taper 5-8 degrees when moving away from the handle. The references are all analogous art because they are from the same field of endeavor of toothbrushes. At the time of the invention, it would have been obvious to use Shipp's bristles in place of Haeusser and Davis' bristles. The motivation for doing so would have been to allow the bristle to bend easily and cause the bristles to be gentle on the gums (col. 4, lines 4-9). Therefore, it would have been obvious to one of ordinary skill in the art to combine Haeusser and Davis' invention with Shipp's bristle diameter to obtain the invention as specified in claims 64-65.

Conclusion

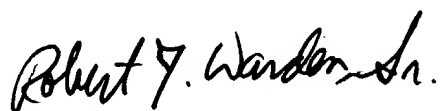
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shay L Balsis whose telephone number is 571-272-1268. The examiner can normally be reached on 7:30-5:00 M-Th, alternating F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Warden can be reached on 571-272-1281. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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